	Application No.	Applicant(s)
Notice of Allowability	10/017,015	DARKEN ET AL.
	Examiner	Art Unit	
	Michael B. Holmes	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *December 14, 2001.*

2. ☒ The allowed claim(s) is/are *1-36.*

3. ☐ The drawings filed on _____ are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some*   c)☐ None of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a)☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

      1)☐ hereto or 2)☐ to Paper No./Mail Date _____ .

    (b)☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

UNITED STATES PATENT AND TRADEMARK OFFICE

P.O. Box 1450, Alexandria, Virginia 22313-1450 – www.uspto.gov

Examiner's Detailed Office Action

1.   Claims 1-36 are allowed.

Drawing Objection(s)

2.   Regarding Fig. 1 - Fig. 4, respectively. New corrected drawings in compliance with

37 CFR 1.121(d) are required in this application. Applicant is advised to employ the services of

a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no

longer prepares new drawings. The corrected drawings are required in reply to the Office action

to avoid abandonment of the application. The requirement for corrected drawings will not be

held in abeyance.

REASONS FOR ALLOWANCE

3.   The following is an Examiner's statement for reasons for allowance:

4.   The closest art *Kadokura, Hidekimi* (USPN 5,929,267), *Umeda et al.* (USPN 5,467,355),

Yesildirek et al. (USPN 5,943,660), *Keeler et al.* (USPN 5,729,661), *Keeler et al.* (USPN

5,479,573), *Kaji et al.* (USPN 6,895,286), *Marko et al.* (USPN 5,041,976), *McCrown et al.*

(USPN 5,067,099) and *Wood, Graeme G.* (USPN 6,424,930) does not teach or render obvious

applicant's claimed invention. In particular, as pointed out below, the art lacks certain features

and the combination as specified in the respective claims.

5.   With regards to claim 1 *Kadokura, Hidekimi, Umeda et al., Yesildirek et al., Keeler et al.,*

Keeler et al., Kaji et al., Marko et al., McCrown et al., and *Wood, Graeme G.,* does not disclose

deriving from said radial basis function neural network a formula for virtual age of a device of

said given type, and applying said formula to said significant parameters from a further device of

the said given type for deriving wear increments for said further device.

6.   With regards to claim 4 *Kadokura, Hidekimi, Umeda et al., Yesildirek et al., Keeler et al.,*

Keeler et al., Kaji et al., Marko et al., McCrown et al., and *Wood, Graeme G.,* does not disclose

deriving incremental wear data for a further device, similar to said sample devices, by utilizing

device data for said further device in conjunction with said coefficients of said radial basis func-

tion neural network determined in the preceding step.

7.   With regards to claim 10 *Kadokura, Hidekimi, Umeda et al., Yesildirek et al., Keeler et*

al., Keeler et al., Kaji et al., Marko et al., McCrown et al., and *Wood, Graeme G.,* does not

disclose deriving an equation for increments of virtual age for each device in said training set,

said virtual ages being normalized substantially to a desired standard value, and applying said

equation to said selected wear parameters of a further device similar to devices in said training

set for computing wear increments for said further device.

8.   With regards to claim 16 *Kadokura, Hidekimi, Umeda et al., Yesildirek et al., Keeler et*

al., Keeler et al., Kaji et al., Marko et al., McCrown et al., and *Wood, Graeme G.,* does not

disclose deriving from said radial basis function neural network a formula for virtual age of a

device of said given type, and means for applying said formula to said significant parameters

from a further device of the said given type for deriving wear increments for said further device.

9.   With regards to claim 17 *Kadokura, Hidekimi, Umeda et al., Yesildirek et al., Keeler et*

al., Keeler et al., Kaji et al., Marko et al., McCrown et al., and *Wood, Graeme G.,* does not

disclose deriving respective wear increments corresponding to said scalars. Modeling said wear

increments by a radial basis function neural network with M hidden units, wherein M is a free

parameter, resulting in a linear system of equations, Determining M coefficients in a supervised

training phase involving N histories of devices which failed. Computing for each device the M

independent sums over all wear increments, thereby obtaining an (NxM) matrix and N equations

for the virtual age of each device, and computing from said (NxM) matrix and N equations a

virtual age for each device.

10.   With regards to claim 20 *Kadokura, Hidekimi, Umeda et al., Yesildirek et al., Keeler et*

al., Keeler et al., Kaji et al., Marko et al., McCrown et al., and *Wood, Graeme G.,* does not

disclose deriving respective wear increments corresponding to said scalars. Modeling said wear

increments by a Gaussian basis function neural network with M hidden units, wherein M is a free

parameter, resulting in a linear system of equations; determining M coefficients in a supervised

training phase involving N histories of devices which failed; computing for each device the M

independent sums over all wear increments, thereby obtaining an (NxM) matrix and N equations

for the virtual age of each device; and computing from said (NxM) matrix and N equations a

virtual age for each device.

Correspondence Information

11.   Any inquires concerning this communication or earlier communications from the

examiner should be directed to Michael B. Holmes, who may be reached Monday through

Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-3686 or facsimile

transmission (571) 273-3686 or email Michael.holmesb@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, Anthony

Knight, may be reached at (571) 272-3687.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service

Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor

of the south side of the Randolph Building.

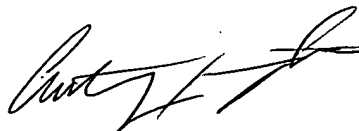*Michael B. Holmes*
Patent Examiner
Artificial Intelligence
Art Unit 2121
United States Department of Commerce
Patent & Trademark Office

Monday, August 08, 2005

MBH

Anthony Knight
Supervisory Patent Examiner
Group 3600